

THE TECH



Vol. 23 No. 14
January, 1904

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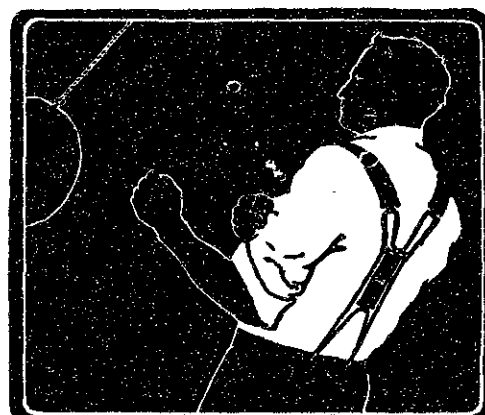
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THE TECH

VOL. XXIII.

BOSTON, JANUARY 14, 1904.

NO. 14.

THE TECH

Published every Thursday, during the college year, by students of the Massachusetts Institute of Technology.

LEONARD T. BUSHNELL, 1905, *Editor-in-Chief*.
CHARLES T. BARTLETT, 1906, *Managing Editor*.
H. EVERETT DARLING, 1906, *Secretary*.
C. H. GRAESSER, 1905.
W. GREEN, 1905.
J. DANIELS, 1905.
A. MERRILL, 1905.
A. H. DONNEWALD, 1907.
C. G. LORING, 1906, *Art Editor*.

MIGUEL AHUMADA, Jr., 1906, *Business Manager*.
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OFFICE: 30 ROGERS, 491 BOYLSTON STREET.

Editor-in-Chief Daily, 8.30-9 A.M.
Business Manager Monday, 12-1 P.M.

For the benefit of students THE TECH will be pleased to answer all questions and obtain all possible information pertaining to any department of the College.

Contributions are requested from all undergraduates, alumni, and officers of instruction. No anonymous manuscript can be accepted.

All communications regarding subscriptions should be addressed to the Business Manager.

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Puritan Press, Boston.

Who misses or who wins the prize;
Go, lose, or conquer if you can,
But if you fall, or if you rise,
Be each, pray God, a gentleman.

IN these days when even sport tends to become a serious business and there is too often evident the win-at-any-cost spirit, it is a pleasure to witness a contest such as the fencing bouts of last Saturday evening. It is not necessary to descant on the virtues of fencing as an exercise for hand and eye; it is that and something more. Fencing calls for a fine sense of honor, a willingness to acknowledge every hit, which in the heat of contest it

is all too easy to forget. It therefore is most gratifying to record that our team were punctilious in acknowledging hits and showed that true sportsman's spirit characteristic of the best in our Tech life.

A LITTLE over a year ago the "Calendar" was introduced into the columns of THE TECH, and has grown to be one of the most important of our departments. Consequently every effort is made to have the Calendar as complete and reliable as possible, but, as was pointed out at the time this feature was begun, we cannot do this without some help from the secretaries and managers of the various student organizations. In order, therefore, to make it easy for these men to have notices appear in the Calendar, we have this week placed at the "Cage" blank Calendar notices which may be filled out and left there. All notices left at the "Cage" before 10 o'clock sharp Tuesday mornings will appear in the Calendar on Thursday of the same week, and we will also make every effort to print notices left up to 12 o'clock Tuesdays.

HONOR SOCIETIES.

A T present about the only method of recognizing a student's ability or popularity is his election as a marshal in his Senior year. In other colleges there are honor societies to which a man is elected, in some for his high scholarship and in others for his evident popularity or leadership among the undergraduates. Such societies are perfectly fitted for installation here. At first the

honor might not seem great, but it would grow with passing years, until to make the "scholarship" society or the "popularity" society would be an aim of every man who is a Tech man at the core. The following plan is advanced for the consideration of the Institute Committee:

A society shall be formed which shall be composed of the ten men foremost in their studies in the Senior Class and of the ten men foremost in the Junior Class. These men shall be chosen by the Faculty as soon as possible after the adoption of the plan. In each succeeding year ten men shall be elected from each of these classes, with the exception that if, in his Senior year, a member elected the year before still holds this pre-eminence, one less new man shall be chosen for each one so duplicating. In the future the men shall be chosen immediately on the commencement of the second term by the members still at Technology and upon the recommendation of the Faculty.

A second society shall be formed which shall be composed of the ten men from each class, excepting the Freshman Class, whom the Institute Committee shall for any reason consider are doing the most for Technology. In the future, members shall be elected by the members at Technology as follows: Immediately after each Christmas vacation five Seniors, five Juniors and five Sophomores shall be chosen for the same reasons as were the original members, under the same conditions as to duplication that would exist in the "scholarship" society; on the Monday of Junior Week five Juniors, five Sophomores and five or less Freshmen shall be elected under similar conditions.

This scheme is not presented as anything which should be followed in any of its details or as one which is in any degree complete, but merely to show what could be done if the necessary actions were taken. Something new would be given the men to strive for; something would be added and nothing subtracted from Tech life.

Changes in Examination Schedule.

Added: Monday, Jan. 25, Fourth Year Constructive Design, 9-12.

Transferred: Fourier's Series from Saturday, Jan. 30, 9-12, to Thursday, Jan. 28, 9-12.

Dropped: Third Year Economic Geology.

Technique Notice.

Will any man who is a member of a fraternity not represented at the Institute please leave his name and the name of his fraternity at the "Cage" before Feb. 15 for J. M. Lambie, Society Editor of *Technique*, 1905? Any new fraternities or new chapters of a fraternity that have been established since *Technique*, 1904 came out, should leave the name of the Fraternity and a list of the members at the "Cage" before Feb. 15, 1904.

Important Show Notice.

In order that there may be as little delay in starting the rehearsals of the Tech Show after the mid-year vacation, all material must be handed in before Jan. 15. Nothing can be accepted after that date unless other arrangements have been made with Mrs. Walker, who may be found at her home, 70 Westland Avenue, any evening but Tuesday and Friday.

Another important matter is that of places on the management. All men intending to try for the positions of assistant business manager or assistant stage manager should hand in a written application to the "Cage," stating their experience and qualifications. Two assistant business managers and two assistant stage managers will be chosen from among the candidates, and it is the desire of the management that the first assistant in each case be a Sophomore and the second assistant a Freshman. In this way men will receive training which will enable them to assume higher positions, with more important duties in coming shows.

Both the foregoing matters are of the utmost importance to the Show, and it is hoped that every one who intends to do anything along the lines indicated will wake up. The Tech Show cannot wait for the slow ones.

The Indoor Meet.

The Annual Indoor Meet, which took place at the Gymnasium last Thursday evening, was one of the most successful of these meets ever held at the Institute. A great deal of interest was manifested by the members of the Faculty and the students at large, as well as by a large number of enthusiastic participants. Dr. and Mrs. Pritchett and many members of the instructing staff were present and also a considerable number of students. Among those present was Mr. Arthur Duffy of Georgetown University, champion 100-yard sprinter of the world. The Mandolin Club was also on hand to play whenever it was possible to do so without interfering with the contests. The Freshmen won the meet, scoring 29½ points, and to some extent wiped out the memory of Field Day by winning the relay race from the Sophomores.

The first event was the trial and semi-final heats of the 35-yard dash. Seven preliminary heats were run and two semi-finals, the time being 4½ seconds in all the heats but one, in which it was 4¾. All the heats were closely contested and in many instances it was difficult for the judges to decide on the order of finishing. After the high jump the final heat was run off, the time being 4¾ seconds. The places were as follows: 1, Lightner, '06; 2, Lang, '04; 3, Noyes, '07; 4, Richards, '07.

In the high jump R. D. Farrington, '05, succeeded in clearing 5 feet 7 inches, Curtis, '04, following closely. Emerson, '05, and Burleigh, '06, tied for third place, Emerson winning the toss for the cup.

The next event was the 35-yard low hurdles. As it was possible to run only four men to a heat and there were a large number of entries, five heats were necessary. Much good material showed up in this event, a new man, Noyes, '07, doing especially promising work. The final took place after the shot-put, the time being 5 seconds, ¾ better than was done last year. The work in the shot-put was not up to the standards of previous years. Barrows, '07, won with a put of 34 feet 3 inches, which is four feet less than was done at the Indoor Meet a year ago. It is very essential to the success of the track team that either the men now at work improve considerably, or that a number of new men of promise come out for this event. Immediately

after this event Dr. Pritchett presented the winners of the events then completed with the handsome cups which were awarded as prizes.

The trials for the potato race were then run off, the cross country men showing up well. The final was won by Howe, '06, and the three other places were taken by members of the Cross Country Team. The pole vault was won by Curtis, '04, who cleared 10 feet. Two new men, Tetlow, '07, and Kenway, '06, showed considerable promise of ability in this event, the former tying with Farrington, '05, for second place. The remainder of the prizes were now distributed and then the score by classes was announced. First places scored 5 points, seconds 3, thirds 2, and fourths 1. The score was: 1904, 17; 1905, 17; 1906, 12½; 1907, 19½.

The relay race, scoring 11 points for the class winning, was therefore to decide the class competition. Since 1904 had no relay team, 1905 team was required to run over the course in order that an absolutely fresh team might not race against one tired with a close contest. The first race was between 1906 and 1907, eleven men to a side, each running 40 yards. The race was very close and exciting. At first the Sophomores led by a couple of yards and then the Freshmen led, but in the final lap it was very even, 1907 winning by about six inches.

The final race between 1907 and 1905 was then run. 1905 led for the first three laps, but then, in spite of the advantage they had in not having been in another race, they fell behind and the Freshmen won by from three to four yards. This gave the Freshmen the highest score, 30½ points.

Summary of events:

35-YARD DASH — FINALS.

1st, Lightner, '06; 2d, Noyes, '07; 3d, Lang, '04; 4th, Richards, '07. Time, 4½ seconds.

RUNNING HIGH JUMP.

1st, Farrington, '05; 2d, Curtis '04; 3d, Emerson, '05, Burleigh, '06. (Tie for third place.) Height, 5 feet, 7¾ inches.

35-YARD HURDLES — FINALS.

1st, Noyes, '07; 2d, Haynes, '04; 3d, Farrington, '05; 4th, Needham, '04. Time, 5 seconds.

PUTTING 16-POUND SHOT.

1st, Barrows, '07; 2d, Paquet, '05; 3d, Curtis, '04; 4th, Baker, '04. Distance, 34 feet 3 inches.

POTATO RACE — FINALS.

1st, Howe, '06; 2d, Chapman, '07; 3d, Marcy, '05; 4th, Lorenz, '05. Time, 53½ seconds.

POLE VAULT.

1st, Curtis, '04; 2d, Tetlow, '07; 3d, Farrington, '05; 4th, Kenway, '06. (Tie for second place.) Height, 10 feet.

MILITARY RELAY RACE.

Won by 1907.

SUMMARY OF POINTS.

1904, 18; 1905, 17; 1906, 12½; 1907, 29½.

OFFICIALS.

Referee, Dean Burton. Judges, Professors Swain, Allen, Talbot, Pope, Park, and Recorder Wells. Timers, Dr. Norris, Major Briggs, and Mr. Jewett. Starter, Coach Mahan. Clerk of Course, Mr. Winslow. Assistant clerk, Mr. Towne.

Basket Ball.

Tech lost for the first time this season Saturday, at Worcester, being defeated by the Worcester "Polytech" team by the close score of 22-18. The game was hotly contested, and the defeat was due to the condition of the floor, which was of the dance hall order. The floor was so slippery that the players were unable to stand up, and the Worcester men, being accustomed to the floor, played all around the Tech boys. At the end of the first ten minutes Worcester led 10-2. Blake, Tech's star left forward, then solved the problem of the slippery floor by removing his shoes and stockings, and playing barefooted, and his example was followed by two other members of the team. After this Tech played all around the Worcester boys, and would have won but for the lead which Worcester obtained in the first ten minutes. Blake played a star game for Tech, and Martin and Hall excelled for Worcester.

Summary:

TECH.

Blake, l. f.

Mathison, r. f.

Wiggin, r. f.

Burleigh, c.

Mathison, c.

Ager, l. g.

Schonthal, r. g.

WORCESTER POLYTECHNIC.

r. g., Freeman

l. g., Martin

c., Butterfield

r. f., Hall

l. f., Dickerman

Goals: Blake, 3; Mathison, 1; Wiggin, 2; Ager, 1; Dickerman, 1; Hall, 4; Butterfield, 1; Martin, 3; Freeman, 2. Goals from fouls: Blake, 4. Referee, G. M. Bartlett, M. I. T. Umpire, Gilbert, W. P. I. Timer, Emerson, M. I. T.

M. I. T. vs. Harvard.

Those who were present at the Gym. last Saturday evening were treated to one of the prettiest and most scientific fencing matches ever witnessed at Tech. The match was between the Fencing Teams of Tech and Harvard, and although Harvard won by the score of 5 to 4, M. I. T. proved to be a most worthy opponent. The Harvard team fenced well and no doubt deserved to win, but their victory was by no means a walkover. So close was the contest that in two of the bouts an extra 2 minutes were necessary to decide. These were the bouts of Holmes (Harvard) vs. Lage (M. I. T.) and Tyng (Harvard) vs. B. Madero (M. I. T.)

Few seem to realize what an excellent team Tech has. Considering that this was our first appearance this season, and considering also the strength and reputation of the team which opposed us, we did remarkably well. If more men will come out for the team, with hard practice we can very reasonably hope to defeat Harvard in the next match, which will take place on Feb. 20.

Summary: — Harvard: H. W. Holmes, capt., W. McLeod, A. Tyng.

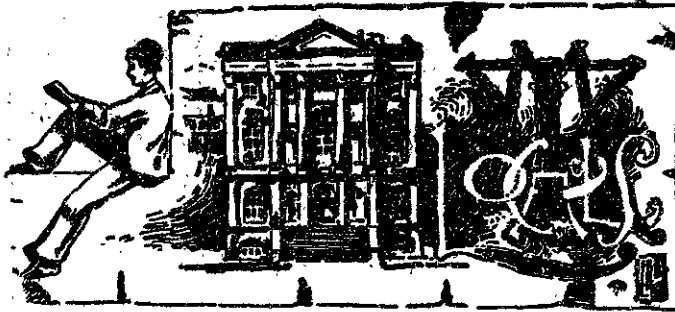
M. I. T.: J. Lage, capt., B. Madero, J. Madero.

Bouts: B. Madero won from McLeod; Tyng from J. Madero; Holmes from Lage; McLeod from J. Madero; Tyng from B. Madero; Holmes from J. Madero; Lage from McLeod; B. Madero from Holmes; Lage from Tyng.

Officials: Referee, Cushing. Judges, Elean (Harvard), Riley (M. I. T.). Timer, Merrill (Harvard). Scorer, Sumner (Harvard).

Geology Journal Club.

At the meeting of the Geology Journal Club held last week, Prof. A. W. Grabau, '96, now of Columbia University, was the speaker. He presented his new classification of rocks and in a very interesting way pointed out the advantages of such a classification. The program for the meeting of Jan. 6 was as follows: W. G. Ball, "The Quick-silver Mines of India." C. E. Danforth, "Asphalt Mining and Refining in the Indian Territory." T. B. Ternan, "A Great Japanese Coal Company." S. Shapira, "Secondary Enrichment of Ores."



H. S. Pitts, '05, has been elected Art Editor-in-Chief of *Technique*.

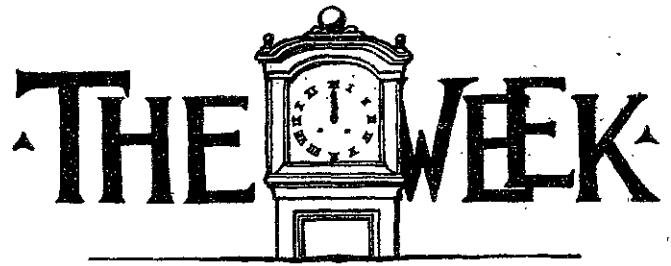
Frank A. Wood of 352 Washington Street has been chosen printer for *Technique*, '05. The Electric City Engraving Company of Buffalo will do the engraving.

All students interested in the formation of a German Society in Tech for the furtherance of the use of German in conversation, should kindly leave their name, year, course, and address in Box 53, "Cage."

The Mining Engineering Society held a regular meeting in Room 2, Rogers, on Monday, Jan. 11. Mr. H. C. Plummer, who was to have spoken, did not appear. Mr. Fleming, '01, however, took his place and spoke on "Copper Mining in Arizona."

The chess team was defeated in its recent game with the Boston Chess Club by a score of 4 to 1. Both sides had one man less than should have been present. The schedule of games will probably have to be changed, as two games come during the exams. As the games are at present chiefly for practice, the loss of one or two will not harm the standing of the team.

Doctor White's lecture on Hygiene last Saturday morning took the place of the regular Military Science lecture. In the course of his lecture Dr. White explained the proper care which should be taken of our bodily organs to obtain the best results in our life's work. The lecture was very interesting and instructive, and was well attended. In his next lecture Dr. White will tell what to do in case of accidents. Since many men now at Tech will afterwards be placed in positions where accidents are more or less likely to occur, they should make it a point to attend this lecture, so that they may learn what to do in case of emergencies.



NATIONAL.

General Rafael Reyes, the Colombian special envoy, has received the answer of the United States to his note charging the government with open violation of the treaty of 1846. The answer, while expressing the wish of this government to deal justly with Colombia, is an emphatic refusal to reopen the Panama question.

The Foreign Relations Committee is holding daily sessions on the Panama treaty. The Democrats in committee are displaying an evident purpose to kill time, but in spite of this delay it is expected that the treaty will soon be reported to the Senate, and the Republican leaders hope early in February to bring the question to roll-call.

The Legislatures of some of the states have instructed their senators to vote for the Panama treaty, and the Press of the country upholds the President's Panama policy.

Lieutenant-General Young having reached the age of sixty-four has been retired, and Major-General Chaffee has been promoted to the office of lieutenant-general and chief-of-staff. General Chaffee has served almost forty-three years in the regulars, and he is well known from his services in China, where he governed justly at a time when many others treated the Chinese barbarously.

FOREIGN.

In the Far East the week has passed in exchanges of notes between Japan and Russia, and although the situation continues very serious, there are hopes that war may be avoided. The Russian government has informed the Powers that it will respect the rights which any nation has in Manchuria by treaty with China. Russia thus removes from the negotiations one of the points upon which Japan counted for the moral support of other Powers.

Japan has notified China that the second Russian reply to her proposals was unfavorable and that unless Russia recedes, Japan will be compelled to resort to arms. In such a case China is expected to maintain the strictest neutrality.

The Bulgarian government has sent a note to the Porte complaining of the nonfulfilment of the promises concerning reforms in Macedonia.

It is announced that Great Britain has agreed to the Anglo-Italian arbitration treaty, which will be signed in Rome.

GENERAL.

John L. Bates and Curtis Guild, Jr., have been inaugurated a second time as Governor and Lieutenant-Governor respectively of Massachusetts. Louis A. Frothingham was elected Speaker of the House, and G. R. Jones was re-elected President of the Senate.

The United States Steel Corporation has started a number of its idle blast furnaces, adding to its production of pig-iron about three thousand tons daily.

According to the walking delegate of the Compressed Air Workers' Union, twenty-six men have died of the caisson disease in the caissons for the Brooklyn and Manhattan piers of the new Manhattan bridge across the East River.

1906 Technique Electoral Board.

The Sophomore *Technique* Electoral Board elections are to begin immediately. At a meeting of the Class Executive Committee it was decided that the election shall occur in the same manner as regular elections of class officers. The nominations for the board will each be signed by ten names or will not be valid. Nominations of at least fifty men, which is twice the number necessary for the board, will be required before the nominations are closed. Nominations will be received by the Executive Committee at any time up to Feb. 13, which is the official date for closing. It is desired to hold the election as early as possible in order to avoid the errors of previous years, when the choosing of the *Technique* Board by the Electoral Committee has occurred far too late in the year. The difficulty in selecting the best men for the *Technique* Board usually consumes much time, and it has seemed best to begin as early as possible.



The Elizabethan performance of *Twelfth Night*, running this week at Chickering Hall, proves as much fun as it was certain to be merely interesting. To a modern audience, even more than to a modern reader, Shakspeare's punning jokes, line after line, are, frankly, a bore; for of course a pun is the shortest lived sort of merriment. Already we have to study—even so, in cases failing to understand—Shakspeare's jokes; and what could be drearier than a joke studied and explained! The Elizabethan jester, too, a figure so unfamiliar in modern society, seems on the modern stage rather silly and foolish, than really funny. All this we may honestly admit without overlooking the real fun of Shakspearean comedy in the humorous characters and the droll situations. So *Twelfth Night*—freer than *Much Ado* from mere punning fun, and providing in the tipsy scenes between Sir Andrew and Sir Toby, in the coward's duel, and in the trick on the solemn and proper Malvolio, "cross-gartered and in yellow stockings," more real frolic than anything in *As You Like It*—is to-day the most comic of Shakspeare's comedies. The lovelier parts, supremely the character of Viola, are Shakspeare's happiest; and the play has many songs that serve—so much more naturally and appropriately than the arbitrary modern "red lights and slow music"—to adjust the listener's mood to the poetry of the romantic scenes. Besides, as we might expect in a play about contemporary with *Hamlet*, there is a good deal of real seriousness in *Twelfth Night*, though it be always an undertone to the Illyrian laughter of love masquerade, and drunken larks, and cakes and ale.

The performance in the Elizabethan manner, that is, on a platform stage with only a curtained recess behind and with no change of scenes, makes especially prominent—as they must have been in Shakspeare's day—the words of the play and the acting. The absence of scenery proves in this play not in the least disconcerting; for it is quite immaterial whether the interviews occur in Olivia's house or the Duke's palace or simply on the street. Maria bids

the conspirators to hide "in the box tree" to observe Malvolio "yonder in the sun, practicing behavior to his own shadow;" but the make-believe is well enough if they simply peep out between the green curtains at the back of the stage. Since no time is needed to change the stage setting, the scenes follow in a succession so rapid that the confusion of the twin characters is really effective. And, finally, the acting is thrown into most conspicuous prominence. Of an Elizabethan performance by professional actors in Cambridge some years ago, the players reported that, after getting over the queerness of the Elizabethan stage, they enthusiastically appreciated the close attention centered on the acting and the sympathetic intimacy necessarily produced between the actor and his audience.

The test of these exacting conditions Mr. Ben Greet's company stands, on the whole, well enough. The songs, to be sure, are queerly sung; Olivia seems intolerably prim and old — she should be of suitable age for Sebastian, Viola's twin; and more fun seems possible in the parts of Sir Andrew and Sir Toby. But the Viola is beautiful, simple and powerful beyond criticism or appreciation; and the Malvolio so well done that it is really the dominant figure of the play. It has been often pointed out that the part is in some essential respects tragic; but the sober earnest of Mr. Greet's acting in the last scene and the gust of tragic emotion attendant on his exit is altogether surprising.

Chemical Society Meeting.

On Friday, Jan. 8, the Chemical Society united with the Boylston Chemical Club of Harvard in a meeting at the Harvard Union. In spite of the storm there were about one hundred students and instructors present; among those from the Institute were Professors Talbot, Fay, Norris, and Noyes.

Mr. Forbes, president of the Harvard Society, welcomed the Tech Society and introduced Professor Richards of Harvard as the speaker of the evening. The subject was, "Some Recent Theories Upon the Constitution of Matter." Mr. Richards gave a review of many hypotheses which had been useful in many ways but which had been set aside. It was stated that the sensational announcements which appear in popular form about the dis-

integration of radium into other elements had not been proved, and many points were brought out which had been based upon very risky arguments. Professor Richards then spoke of some work which he had done upon the volume of the atom, and showed how his hypothesis would explain weak places in other hypotheses. In closing he gave the advice to know the difference between a dream and the reality and never to take the dream for fact.

After the talk refreshments were served and the members of the two societies had a chance to become acquainted. It is hoped that next term the Chemical Society can arrange another joint meeting to be held at the Tech Union.

Calendar.

THURSDAY, JAN. 14.

- 1.00 P.M. CHOICE OF COURSE LECTURE, Course VI., by Professor Duncan, in Lowell 6.
- 4.00 P.M. CHOICE OF COURSE LECTURE, Course XII., by Professor Crosby in 12 Engineering B.
- 4.15 P.M. VARSITY RELAY TEAM. First Trials at the Gymnasium.
- 4.15 P.M. ALL-ROUND ATHLETIC CONTEST at the Gymnasium. Third event, 35-yard dash. 1st, 15 points; 2d, 12; 3d, 9; 4th, 6; 5th, 3; and 6th, 1.

FRIDAY, JAN. 15.

- 1.00 P.M. CHOICE OF COURSE LECTURE, Course VIII., by Professor Cross, in Walker 22.
- 8.00 P.M. SOCIETY OF ARTS MEETING at Lowell Building. Prof. J. W. Richards of Lehigh University will address the Society on "The Use of Electricity in Metallurgy."
- 8.00 P.M. AT THE UNION ARCHITECTURAL SOCIETY SMOKER, Mr. Buzzell, superintendent of the Gilbreth Construction Company, will speak. Tickets 25 cents.

SATURDAY, JAN. 16.

- 1.00 P.M. SENIOR AND JUNIOR EXERCISES CLOSE.
- 3.00 P.M. BASKET BALL TEAM vs. N. H. AGRICULTURAL COLLEGE at Durham, N. H.
- 6.00 P.M. REGULAR INFORMAL DINNER at the Union.

WEDNESDAY, JAN. 20.

- 6.30 P.M. CLASS OF 1901 REUNION at the Union.

THURSDAY, JAN. 21.

- 4.00 P.M. SOPHOMORE EXERCISES CLOSE.

FRIDAY, JAN. 22.

- 8.00 P.M. AMERICAN CHEMICAL SOCIETY Meeting at the Union.

TUESDAY, FEB. 9.

- 10.00 A.M. EXERCISES OPEN FOR SECOND TERM.

The Engine Test in the Lowell Laboratory.

For some years past it has been the custom of the Department of Mechanical Engineering to run a boiler test soon after the return of the Senior Class from their Christmas vacation. This year the installation in the Lowell Laboratory of two large direct connected units enabled the department to supplement the usual boiler test with an engine, dynamo, and cooling tower test.

The methods pursued in testing these three pieces were as follows:

The boiler test, which we will describe first, requires to be run a considerable time, in order that the data may be as accurate as possible. In this case the boilers were run continuously for seventy-two hours, requiring nine shifts of four men each, working eight hours per shift. Of these men, the first weighed all the water fed to the boilers, the second analyzed the flue gases and observed the draft in the stack and the temperature of the gases in the stack; the third weighed all the coal fired and the ashes taken away, while the last man determined the amount of moisture in the steam by means of a calorimeter.

The engine which was tested is what is known as a tandem compound, directly connected to an alternating current generator. The horse-power developed was obtained by means of four indicators placed one on each end of the cylinders, and operated by four men, one for each instrument. Another man recorded the number of revolutions per minute, and these results when properly applied to the dimensions of the engine gave the indicated horse-power, that is, the energy which would be supplied to the generator, were there no friction losses.

The output of the generator was absorbed by wire resistance coils, water-cooled, while suitable instruments on the main switchboard, read at frequent intervals, gave the output of the machine in kilowatts. These same instruments enabled the load to be kept constant, a necessary condition in this work.

There yet remains the cooling tower, which stands just back of the lunch-room, at the right of the door of the Lowell Laboratory.

The function of this tower is to cool by evaporation the water used in condensing the steam used by the engine. The tower has its lower portion lined with brick, with a concrete pit beneath; the upper portion is filled with drain pipe, and a motor-driven fan blows air upward through the tower. Water drawn from the pit at the bottom by a large duplex pump alongside the engine is pumped through the condenser, and after condensing the steam and becoming heated passes up to the top of the tower and is there sprayed out over the drain pipe.

It then falls through these cool obstructions and losing its heat finds its way into the pit, to be again pumped through the same circuit. To cause this cooling, evaporation is necessary, and consequently the loss must be made up from the city main. This water, called "make-up water," was weighed on the floor of the laboratory and supplied to the suction main of the pump, keeping the water in the pit at a constant level.

The large duplex pump which circulates this water has its steam cylinders in the middle and while one end acts as a circulating pump, the other end pumps the condensed steam from the condenser into weighing tanks, from which it is supplied to the boilers through a feed water heater in the boiler-room.

A. GARDNER.

Shall Technology Move?

The subject of the debate of Wednesday, Jan. 6, was:

Resolved: That the removal of the Institute to the suburbs is of advantage to the students.

The affirmative began by stating that arrangements are practically complete and that the only question is one of advisability in respect to studies. They held that college life is necessary to broaden a man and that in this fact lay the most potent reason for leaving the city. The affirmative also referred to the present unhealthy conditions of living under which many students live, and argued that a normal growth of our athletics is to be desired.

The negative replied that Technology is a scientific school, and that being such, social life would be detrimental to the scientific education. They affirmed that the changes against the conditions of health were absurd. The last speaker for the negative took up the disadvantages of moving from the present helpful environment, and held that there must be a relapse from our present high standards if we move.

The Tech Hop.

The third annual Tech Hop given under the direction of the Freshman Battalion took place at Paul Revere Hall, on Tuesday, Jan. 12. The committee in charge of the affair consisted of the following men: Boles, Chairman, Bancroft, Sec., Gammons Treas., Rood, McGregor, Chase, Hudson, Christy, Packard, Walsh, Otis, Sage, Ashenden.

The matrons were Mrs. Rand, Mrs. Tyler, and Miss Burton. Profs. Tyler, Burton and Mr. Rand were also present. Representatives of most of the suburban high schools were present, and their various uniforms made a very pretty picture. The grand march was led by Capt. Boles with Miss Mills.

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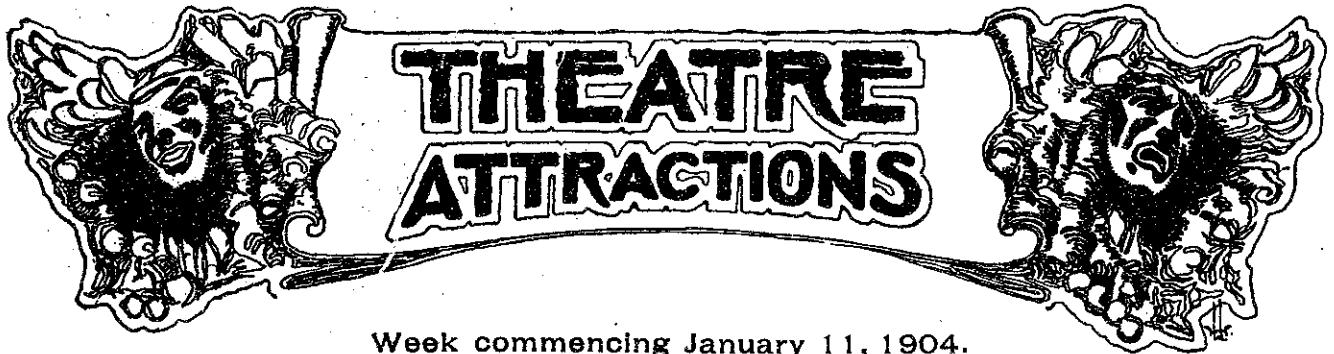
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Colonial Theatre.—Two weeks' engagement of the new queen of comic opera, Fritz Scheff, in "Babette." Stirring music, clever comedy and stunning stage settings. Only matinee Saturday at 2.

Majestic Theatre.—Second week of Mildred Holland in "The Triumph of an Empress." The story of the play deals with the incidents in the life of Catherine II. of Russia, or better known as "Catherine the Great," the character being played by Miss Holland.

Hollis Street Theatre.—The largest and best production in which Klaw & Erlanger have yet presented the Rogers Brothers, John J. McNally's latest, "The

Rogers Brothers in London," will be seen two weeks more at this playhouse.

Globe Theatre.—Last week of Weber & Field's Big Musical Comedy success, "An English Daisy," with an all star cast, including Charles A. Bigelow and Christie MacDonald. Next week, Hanlon's new "Superba."

Park Theatre.—Limited engagement of Fay Davis in Henry Arthur Jones' greatest play, "Whitewashing Julia," supported by members of the Empire Theatre Company. Wednesday and Saturday matinees at 2.

Columbia Theatre.—First appearance in Boston of the young American tragedienne, Miss Nance O'Neil, and company of superb merit in a series of classic plays. Monday, Tuesday, Wednesday, Wednesday matinee and Thursday, "Magda." Friday and Saturday matinee and night, "Hedda Gabler."

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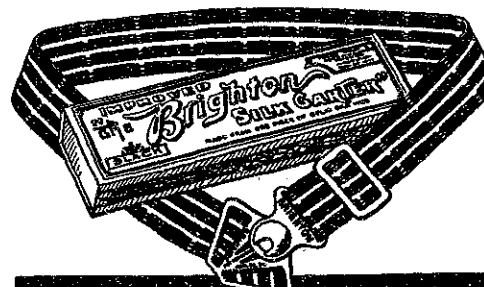
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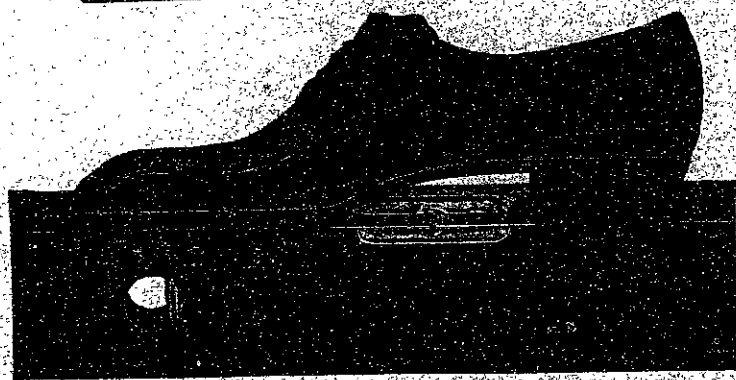
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